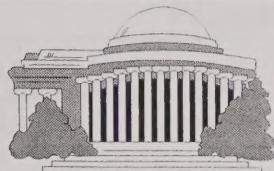




The Capitol Hill Monitor



Volume 22 Issue 1 (2019)

February 2019

CHM GET-TOGETHER THIS SUNDAY !!!

ledo's Restaurant in College Park has reserved space for us starting at 2 p.m. on Sunday, February 10, 2019.

IMPORTANT: Ledo's often does a few group checks with 20 percent added for tip. We'll have to split it up on our own. So please bring extra small bills with you! The restaurant is at 4509 Knox Rd near the Univ. of Maryland off U.S. Route 1. Free public parking is available on Sunday! No need to RSVP, just show up! **EVERYBODY'S WELCOME TO COME.**

Mick Lemish (see article below) will demo push-to-talk over cellular technology using what look like regular walkie-talkies that are actually Android "network radios" and explain how we can build our own affordable nationwide two-way "radio" networks!

We can also assist those who need assistance adding the Zello app to their phones so they may join us on the NCR notification group. The password for the group is "scandc2018!" (without the quotation marks and make certain to include the exclamation point).

PUSH-TO-TALK OVER CELLULAR SURGES BACK! WHAT THIS MEANS FOR US!

By Mick Lemish

Working for Nextel Communications at the height of its success and being the inventor of Dispatch Communication Forwarding (a feature patented by Nextel; US Patent #7991389B1), I am very happy to see Push-to-Talk returning to mobile telephone handsets.

Push-to-Talk (PTT), also known as press-to-transmit, is a method of having conversations or talking on half-duplex communication lines, including two-way radio, using a momentary button to switch from voice reception mode to transmit mode.

Nextel™ was the first company to implement a nationwide push-to-talk system similar to a walkie-talkie. Nextel became the first company in the United States to offer a national digital cellular coverage footprint. Nextel was also the first in the United States to integrate global positioning system features into its phones.



Direct Connect™ was a brand name of Push-To-Talk offered by Nextel. The service was part of a Motorola iDEN Specialized Mobile Radio (SMR) network system, proprietary to Nextel, operated in the 800 MHz spectrum.

Direct Talk™ was Nextel's "Off Network" walkie-talkie functionality using a separate internal radio on ISM band frequencies in the 900 MHz spectrum. The Direct Talk capability provided specific Nextel-capable phones the ability to use PTT within line-of-sight of other Direct Talk-capable radios when the Nextel Network was unavailable or in areas and buildings where reception was unusable.

Today we hear the term **Mission Critical Push-To-Talk** or **MCPTT**. MCPTT is a next-generation push-to-talk technology that runs over LTE cellular networks and supports group communication service, even when there's a surge in users, through the application of Group Communication System Enabler (GCSE). Public safety-grade communications require mission critical networks like Band 14, services such as FirstNet and applications like MCPTT.

FirstNet™ (First Responder Network Authority) was created under the Middle Class Tax Relief and Job Creation Act of 2012 as an independent authority within the National Telecommunications and Information Administration (NTIA). FirstNet operates a nationwide GSM-based LTE broadband network for public safety and first responders with its own frequency band and priority and preemption when users are sharing bands with commercial networks.

BAND 14 is nationwide frequency spectrum set aside by the government specifically for FirstNet; 20 MHz wide in the 700 MHz band providing good propagation in urban and rural areas with decent penetration into buildings.

All of the major cellular carriers now offer their own variety of PTT as an add-on service with downloads from various 'app' stores. After Nextel was phased out, Sprint offered the first-ever PTT 'app' called Qchat, developed by Qualcomm. Sprint now offers "Direct Connect Plus" developed by Kodiak, AT&T offers 'EPTT' or Enhanced Push-To-Talk and Verizon offers 'PTT+' or PTT Plus.

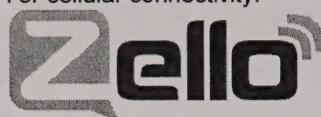
ESChat, **ReadyOp** and **Orion** are brand-name Mission Critical Push-To-Talk platforms. ESChat is FirstNet Certified™ and offers GPS location functionality. **WAVE** and **BeON** are other Mission Critical PTT solutions with similar robust features. WAVE is a wholly owned subsidiary of Motorola and BeON is a Harris product. All of these are designed to be LMR integrated enterprise-based solutions for smartphones, tablets, and computers. Many of these platforms are also offered as hosted solutions.

Zello is a top-rated free walkie-talkie app similar to HeyTell and Voxer. It is not mission critical, but can be used just like any of the MCPTT apps. Unlike standard calls you can make

on a cell phone of your choice, these apps connect you to virtual 'channels' where many users can talk regardless of distance provided they have Wi-Fi or cellular connectivity.

Zello is the industry leader in the consumer market, but also has public safety agency users.

In addition to the free Zello app, they offer a business-based app with GPS location features and dispatch capabilities for large groups. The Zello business app competes with business-centric platforms like PTT4U and others.



Radio over Internet Protocol (RoIP) is similar to Voice over IP (VoIP), but augments two-way radio communications rather than telephone calls. From the system point of view, it is essentially VoIP with PTT (Push-To-Talk).

RoIP can be deployed over private networks as well as the public Internet. It is useful in public safety land mobile radio systems. With RoIP, at least one node of a network is a radio (or a radio with an IP interface device) connected via IP to other nodes in the radio network. The other nodes can be dispatch consoles, either traditional (hardware) or modern (software on a PC), applications (apps) running on a PDA or smartphone, or some other communications device accessible over IP.

The motivation to deploy RoIP technology is usually driven by one of three factors: the need to span large geographic areas, the need to support the use of many remote base station users, and third, to save money over traditional LMR device costs. RoIP by its nature is interoperable, as it is irrelevant what type of technology it utilizes. RoIP systems routinely combine VHF, UHF, cellular and SATCOM **Gateway and IP Integration** devices that connect LMR radios to the Internet via 4G, Wi-Fi, LAN, WAN, satellite, etc. Connect your radio system to a gateway and stay connected anywhere you have a connection and a device. Implement hardware on your own WAN, servers and Internet connections or contract a hosted solution for a predictable, low-cost per user subscription fee.

Radio over Cellular (RoC) is the generic term for RoIP that is not necessarily integrated with LMR. There are manufacturer-specific devices for different platforms or a plethora of Android devices being released with a PTT button that can be used with Push-To-Talk apps. When looking for a phone that does RoC or MCPTT, purchase the best device you can afford. Many inexpensive Chinese devices are for sale on Amazon and eBay, but you get what you pay for.

What does **FirstNet-compatible** mean? Any unlocked GSM iPhone, Android or other device can be provisioned for service on the FirstNet network. The core and backbone is AT&T, so if the phone is a GSM-based device that works on AT&T, it will work on FirstNet. You will need a newer device like the iPhone XS, Samsung S9 or Somin XP8 to take advantage of the public safety-only band (specifically ask if your phone is "Band 14" capable).

There are **Consumer Network-compatible** devices that are available if you are not a first responder and do not need Band 14. Make sure any device you already have or that you plan to purchase is capable of operating on the 3G

and 4G LTE bands and cellular network you desire, that you wish to subscribe to or your organization may subscribe to. Any phone that works on an existing American carrier network is capable of Push-To-Talk by downloading one of the many PTT apps. Though not a requirement, look for a newer device that has a dedicated PTT button.

While other carriers may offer priority and preemption to public safety subscribers, they cannot offer service on Band 14. Band 14-capable devices can be provisioned on commercial carrier networks for use with other bands, but unless provisioned on the FirstNet network, Band 14 will not be utilized. And then there are **Network Radios** that offer unlimited range two-way radio capability.

Android devices marketed as "Network Radios" are the latest new phenomenon to hit Europe and Asia. They are sold as two-way radios, globally connected via 3G and 4G cellular networks (or Wi-Fi) — essentially an Android phone ready for Push-To-Talk. The services utilized are the same ones discussed in this article, most commonly, Zello.

Available as a handheld radio, with or without a display, or as a mobile radio, they can now be found on Amazon, eBay and various websites. Many of the devices come preloaded with an older version of Zello and Android operating system build of 6.0 or earlier. Top brands include Anysecu, Boxchip, Inrico, Radio-Tone, Sure and Talkpod. Motorola has entered the network radio market with the Motorola TLK-100 using a proprietary network and subscription-based model.

Be cautious before making a Network Radio purchase as most of these are not produced for US cellular networks. While they claim to be GSM, CMDA or WCDMA compatible, frequency bands for those types of networks differ in Asia and Europe than in America. A small number of these devices offer 4G or LTE, but if you are only using the device as a radio, you won't need the additional bandwidth or speeds and 3G works fine.

Just make sure you purchase a US or American device. A few network radio models are offering options with a conventional VHF or UHF radio module capable of both analog and DMR.

The Boxchip S700A is the only device with a radio module and operating in the US cellular bands. The newer Inrico version with an RF module seems to be EU cellular bands only.

After reviewing several of the most popular network radios, the F22, F25, G25, F36, RT3, RT4, RT5, TM-7 and TM-8, my conclusion is they are all lesser-quality devices and the Android operating systems are old and bulky.

I like the Anysecu F25 handheld best for its size, form factor and LTE capability. I liked the Inrico RT4 handheld for its ruggedness, but didn't like the large box-like form factor. Of all the mobiles, I prefer 3G TM-8 over the 3G TM-7 or the 4G TM-7plus because the TM-8 uses the same 10-pin microphone connector as newer public safety Motorola radios and they have interchangeable mics. Overall, if you want this to also be your daily-use phone, I would recommend purchasing a popular handheld sold by most cellular carriers in the US like the rugged Somin X8, the older X7, X6 or even the X5.



If you plan to use a network radio only as a two-way radio or if you intend to outfit a fleet of employees with these "radios," I suggest looking at the Inrico T199 or T192 or something similar from another manufacturer. These are essentially Android phones with no screens and only a traditional PTT button, channel knob, volume knob and speaker/mic connector.

You configure the apps on the phone by loading a screen emulator to your PC and viewing the virtual screen on the PC. You will need PC software such as Total Control and the specific Android drivers for the device. Once you connect to the device, if you are within proximity of Wi-Fi, you can configure those Wi-Fi networks (Wi-Fi networks may only be selected while connected to the Total Control software).

Use Total Control to set the phone to launch your PTT app when the phone powers on. Use the PC software to set the PTT app to work with up to 16 different channels on the radio; Zello.com has a section on its website that explains this.

You will need a cell service and a SIM card if the radio will not be connected to Wi-Fi all the time. I'll offer, below, suggestions on cellular phone service plans suitable for network radios. If you only plan to use your network radio for PTT, you will be fine with a data-only plan. It is unlikely that you will need 2GB or more per month when 200MB will probably suffice.

Most of the imported phones mentioned in this article work on GSM networks such as AT&T and T-Mobile. I have found that the best SIM card to use in the USA for network radio on the AT&T backbone is the \$0 Freedom Pop LTE SIM. This is a data network SIM that you could use for calls and text, but you will need a larger plan and most importantly you will have to download proprietary Freedom Pop phone and messaging apps to make VoIP calls and send text messages.

GSM Resellers: Cheap access for network radios or phones on AT&T:

Freedom Pop — \$0* for 200MB, \$14 for 2GB (*tested and recommended. Subscribe to the automatic Top-Up service with a \$20 deposit so that if you run over, it pays for minutes at a minimal price per MB, less than 5 cents or so.)

Cricket Wireless — \$30 for 2GB, \$50 unlimited

Straight-Talk — \$35 for 2GB, \$54* unlimited (* recommended)

ROK Mobile — \$35 for 5GB, \$55 for 10GB

Pure-TalkUSA — \$35 for 5GB, \$45 for 10GB

Black Wireless and RedPocket Mobile are other low-cost resellers recommended by others.

You can purchase the \$0 monthly, 100 percent FREE talk, text and data plan on Freedom Pop by purchasing a SIM card online at a third party like Amazon or Best Buy and then activating the card online. I have found that purchasing the card from Freedom Pop or talking to Freedom Pop customer service over the phone to activate an account can result in being up-sold and having to downgrade your plan after your first month of service. Say "no" to all Freedom Pop special offers.

If you are a first responder you may want to use FirstNet as your service provider for a network radio or even your per-

sonal phone. Any public safety agency or first responder can have their device activated on FirstNet. As an individual, not part of agency-pooled billing, you will have priority access on Band 14 if you have a compatible phone.

You must show appropriate first-responder identification to open an individual account. The standard individual plan is unlimited talk, text, data for \$37.50 or \$44.99 with hotspot and tethering on the plan. Data is never throttled! See the plans on AT&T's website.

SCANNING OCEAN CITY, MARYLAND'S SUMMERTIME PLAYGROUND!

Like many jurisdictions throughout the United States, the term P25 has become synonymous with public safety communications over the last several years. As of February 2018, Worcester County and as of January 2019, Ocean City, Maryland have joined the list of systems that will now require a P25 phase 2-compatible scanner. This upgrade should come as no surprise to any modern scanner enthusiast!



Ocean City and Worcester County both shared a 20+year-old legacy M/A-Com combined six-site EDACS system that reached its end of life. Despite the upgrade, both P25 systems still share some common roaming functionality and talkgroups. Worcester County and Ocean City share the same WACN which allows interagency roaming while maintaining their respective separate systems.

Ocean City reused its existing three tower sites while adding a complete five-channel backup system in Ocean Pines. Worcester County went from a three-site simulcast system to six sites adding coverage in areas that were known to have problems prior to the upgrade. These new sites are on MD Rt. 12 at the Nassawango Fire Tower, Pocomoke City in the Industrial Park and in West Ocean City at the Mystic Harbor development on Rt. 611.

When listening to Ocean City and Worcester County, you will find the talkgroup layout is almost identical to what was on the EDACS system with a few minor changes and some consolidation of groups using them. It should also be mentioned there are now several AES 256-bit encrypted talkgroups, mostly related to law enforcement activities. The online Radio Reference database for system info and talkgroups is accurate.

For those who don't want to upgrade to P25 just yet, there is still plenty of activity to monitor on conventional frequencies as both systems simulcast their fire and EMS responses from the trunked radio system to analog VHF channels.

If you have been on the fence with upgrading to a P25 scanner, it is worth the investment. The State of Maryland has a statewide P25 system that is active in Ocean City with law enforcement and other state agency traffic. Locally, Wicomico County recently went live with a P25 Motorola system and a future P25 Harris system is under contract in Somerset County. The State of Delaware is rumored to soon follow.

System Information

Site: 19A WACN: 92F70

RFSS: 30, Site: 30 Name: Ocean City

Frequencies: 769.26875, 770.05625, 770.85625, 772.10625, 772.53125 and 772.70625

Site: 19A WACN: 92F70

RFSS: 5, Site: 5, Name: Ocean Pines

Freqs: 856.5375, 857.7375, 858.2875, 858.7375 and 859.6125

Site: 06E WACN: 92F70

RFSS: 10, Site: 10, Name: Worcester County

Freqs: 855.9625, 856.4625, 857.4625, 857.7125, 858.4625, 858.7125, 859.4625 and 859.7125

Conventional

158.895 Ocean City Fire / EMS Dispatch

154.085 Ocean City Fireground

154.025 Ocean City Medevac Patch (PL 146.2)

155.100 Worcester County Fire / EMS Dispatch

155.865 Worcester County Fireground

39.180 Worcester County Medevac Patch

For firehouse alerting, Spotsylvania relies on automatic incident paging through P25 portable radios and in-station IP systems.

FAIRFAX COUNTY EXPANDS PUBLIC SAFETY CAPABILITIES

by Kenneth Fowler, KD4IIW

In November 2015 voters in Fairfax County voted on a bond referendum that upgrades current and builds new public safety facilities for the future. Among the new facilities are a new fire station for the Tysons Corner area and a new Lorton joint police station and animal shelter. Additional bond referendums in 2018 planned for expansion of other police and fire/rescue facilities.



2015 Bond- New Police facilities — Police Heliport — West Ox Road (\$13,000,000) — The county plans to build a brand-new facility at the current heliport on West Ox Road. A new building and heliport are needed to house the current fleet of helicopters and room for staff.

South County Police District Station / Animal Shelter in Lorton — Workhouse Road (\$30,000,000) — A new Lorton District police station is planned for county-owned property on Workhouse Road near the intersection of Lorton Road in the Lorton area of Fairfax County. The animal shelter will be a new one to serve the southern portion of the county. It will also assist the Animal Protection Police to cut down on vehicle travel time to and from the existing shelter on West Ox Road. This land was the former location of the DC Lorton Reformatory. Presumably this new district could be Station 9 and a new set of talkgroups will be created or it could assume the HQ/countywide group set.



MONTGOMERY COUNTY MOVING FORWARD WITH P25 TRUNKED RADIO NETWORK

Montgomery County's new P25 radio system is moving along at a steady pace. "We are on track for Phase 1 implementation (Astro Core (SmartX)) this coming Spring with anticipation of Phase 2 cutover (complete system) in 2020," says Battalion Chief Michael Baltrotsky, the fire/EMS technical operations manager. The county is currently proceeding through the process of site acquisition, permitting and build-out which he notes is a lengthy process. The new system will have 22 radio sites.

Chief Baltrotsky says the existing alerting and simulcasts will continue to the two VHF channels — 154.16 and 153.95 — with some possible expansion.

The county continues to license and program these legacy VHF freqs into the dual-band fire/EMS radios: A-154.16/154.71 (Disp), B-153.95/154.83 (Ops), C-155.52, D-155.1, E-155.34, F-154.355, G-155.985, H-155.28, I-155.805, J-150.995/159.195, K-154.28 (VFIRE21) and L-154.295 (VFIRE23).

Unication G4/G5 pagers are also being evaluated. As far as encryption use goes by fire/rescue personnel, Chief Baltrotsky said, "As of now it will remain the same as it is today in the new system." So only special channels will be encrypted. No word yet on the MCPD encryption plans.

SPOTSYLVANIA AND STAFFORD ABANDON VHF SIMULCASTS

Ken Fowler reports that Spotsylvania and Stafford counties have discontinued their VHF fire/EMS paging simulcasts in January. Spotsylvania used 156.195 and Stafford's was 154.175.

2015 Bond — Renovated Police Facilities — Franconia District Police Station (\$23,000,000) — The current police station was built in 1992 and additional space is needed for staff, operations and parking. The station houses the Lee District Supervisors Office and Franconia Museum. Emergency vehicle operations training center and K9 center — Academy (\$10,000,000) — Pine Ridge Operations Support Bureau — Woodburn Road (\$24,000,000).

2018 Bond — Police Facility Renovation — Police Evidence Storage - Police Annex Building — (\$18,000,000) — Mason District Station (\$23,000,000) — The current station was built in 1975 and additional space is needed for staff and operations.

Criminal Justice Academy — (\$18,000,000) — The academy trains law enforcement from the county police, sheriffs office and police from Herndon and Vienna. Additional space is needed to conduct training and update building systems.

Future Planned New Police Facilities:

Tysons District Police Station — Future growth of the Tyson's Corner area requires the need for greater police services.

New Fire / Rescue Facilities — **Fire Station 44 — Scotts Run (Tyson's Corner)** — This new firehouse will be on Old Meadow Lane near the intersection of State Route 123 and Interstate 495 (Capital Beltway). A developer in Tysons Corner has proffered construction of the new firehouse. Read more here.

2015 Bond - Renovated Fire / Rescue Facilities

Fire Station 25 — Reston (\$13,000,000) — A new two-story four-bay firehouse will be built at the current location. The original building was constructed in 1972.

Fire Station 11 — Penn Daw (\$10,000,000) — This firehouse was constructed in 1967 as a volunteer facility. It is one of the county's oldest and busiest. The apparatus bays are undersized. A new or renovated building would house a tiller truck.

Fire Station 24- Woodlawn (\$10,000,000) — The current building was constructed in 1970 and the apparatus bays are undersized. Plans call for expanding this 2.5-bay station to four bays.

Fire Station 26- Edsall Road (\$10,000,000) — The current building was constructed in 1974 and the apparatus bays are undersized. Plans call for expanding this 2.5-bay station into a four-bay station. A two-alarm fire in May of 2017 severely damaged one of the apparatus bays. Construction will begin in 2019

2018 Bond - Renovated Fire / Rescue Facilities

Fire Station 9 – Mount Vernon (\$16,000,000) — The current building was constructed in 1969 and the apparatus bays are undersized. Plans call for a renovation or new construction of the station to include four apparatus bays.

Fire Station 32 — Fairview (\$16,000,000) — The county plans on locating a tanker to this station because of the need for fire suppression in non-hydrant areas of the first-due response area. Space is needed in the apparatus bay.

Fire Station 20 — Gunston (\$13,000,000) — The current station was constructed in 1976 and requires building upgrades. Apparatus bays are undersized. A third apparatus bay is needed to house a fire boat assigned to this station.

Fire Station 28 – Seven Corners (\$13,000,000) — The current station was constructed in 1977 and requires building upgrades. Apparatus bays are undersized.

Volunteer fire station asset transfers to Fairfax County — (\$15,000,000) — Planning for future volunteer fire department asset transfers to Fairfax County. Planned upgrades to the new buildings as identified.

Bailey's Crossroads Volunteer Fire Department – Fire Station 10 — The volunteer department transferred its building assets to the county in 2011 due to storm damage to its existing building. The county built a new firehouse at this site in 2014 and continues to run joint operations with the volunteer dept.

Lorton Volunteer Fire Department – Fire Station 19 — (\$14,140,000) — The volunteer department transferred its building assets to the county in 2014. The county is currently constructing a new two-story, four-bay firehouse on this 3.3-acre site. The original building was constructed in 1961 and the facility needs to be replaced. The county will continue to run joint operations with the volunteer fire department.

In addition to the monies needed to build or renovate the facilities, staffing needs for police and fire/rescue facilities require a large increase in the operating budgets. The Department of Public Safety Communications (9-1-1 center) is also asking for an increase in staff to accommodate a new police district and animal control shelter. The proposed staffing, if approved, will allow for one dispatcher per district station plus two relief dispatchers to rotate for breaks. Currently, a police dispatcher handles dispatching duties for two district stations. Normally the police district radio channels are patched together as follows:

HQ/1/8 – Headquarters (CIB/CSI/countywide) /Sully / Fair Oaks
2/6 – Mount Vernon / Franconia

3/5 – McLean / Reston

4/7 – Mason / West Springfield

The OEM also plans to operate a full-time EOC or watch center. Currently the EOC is not a full-time operation. The Sheriff's office requests additional staffing for the increase in mental health housing and transportation as required by law.

ORANGE COUNTY BUILDS 700 MHz P25 NETWORK

by Kenneth Fowler, KD4IIW

In June of 2018, the Board of Supervisors chose Harris Corporation to construct a five-channel (P25) TDMA simulcast public safety trunking radio system. The goal is to upgrade radio coverage for the sheriff's office and to provide for interoperability among law enforcement, fire and EMS agencies.



Existing Radio Communications System — The county currently uses a conventional three-channel VHF radio system to support fire and EMS communication. Fire and EMS has three tower sites: **Clark Tower** (Rapidan) on Mooremont Road, **Gibson Tower** (Gordonsville) on Honnah Lee Farm Road and **Lake of the Woods Tower** (Locust Grove) on Fairway Dr.

Local law enforcement agencies, the county's school system, and Gordonsville public works and town government use a MOTOTRBO (DMR) system for primary radio communications. Antenna sites for this network are on the Clark Tower and Orange County Sheriff's Office water tank on Porter Rd.

As a backup, the DMR users rely on the county's VHF conventional radio system served from the Gibson and Lake of the Woods towers. See this [RadioReference webpage](#) for the current fire/EMS and sheriff VHF channels.

The newly consolidated emergency communications department provides dispatch services for the town police departments in Orange and Gordonsville, Fire and EMS Departments, and the Orange County Sheriff's Office.

The PSAP is at 112 W. Main St. in the Town of Orange. A planned expansion of the Sheriffs Office building on Rt. 20 near the airport will house a new 9-1-1 PSAP and dispatch center.

The new system will utilize six antenna sites including the three current sites. Four new towers will be built on county property at **Barboursville** on Mountain Track Road; **Locust Grove** on Flat Run Road (RSA water tank); **Town of Orange** at Prospect Heights Middle School; and **Locust Grove** at the RSA wastewater treatment plant on Germanna Highway.

Potential users of the newly proposed system include: Barboursville VFD, Gordonsville PD, PW and VFD, Lake of the Woods Assoc. security and VFD, Mine Run VFD, Orange County Emergency Communications Dept., Fire & EMS (COFEMS), public schools, sheriff's office, Town of Orange PD and VFD.

The county also wants the subscriber radio equipment to be programmed and interoperable with the following surrounding counties: Albemarle, Culpeper, Fauquier, Greene, Louisa, Madison

and Spotsylvania. It should be able to operate in conventional P25 phase 1, trunked P25 phase 1, trunked P25 phase 2, talk-around P25 phase 1 and conventional analog.

No FCC licenses have been identified yet for this system but the RFP states that the Region 42 planning committee has allocated the following repeater output frequencies for this system: 770.6125, 771.1125, 772.4875, 773.8875 and 774.6875.

The county specified in the RFP that radios be capable of operating in the 700 and 800 MHz bands and operate in both P25 phase 1 and 2 trunking modes. The radio sites will also potentially provide service for a countywide broadband public Internet service. The reported completion date is December of 2020.

NEW NCR-MARITIME ZONE

Jurisdictions in the National Capital Region (NCR) are programming a maritime zone in their trunked radios using talkgroups from different trunked systems. The new zone is intended for use by first responders such as the Coast Guard, D.C. Harbor Patrol (MPD), fire boats, police helicopters, etc. The actual line-up may vary, but these are the talkgroups from the respective systems. Additionally, VHF marine channels 13 (156.65), 16 (156.8), 17 (156.85) and 81A (157.075) are included if possible.



Uniden	Hex	User/Agency
1353	549	Fairfax 42-L (Marine 1)
1355	54B	Fairfax 42-M (Marine 2)
1584	63	Charles 10-A-12 (Marine A)
1616	65	Charles 10-A-13 (Marine B)
3164	C5C	Prince William 55-F (Marine 1)
3165	C5D	Prince William 55-G (Marine 2)
9101	238D	Prince George's Marine 1
9103	238F	Prince George's Marine 2 (encrypted)
744	2E8	D.C. MIC-1
746	2EA	D.C. MIC-2
747	2EB	D.C. MIC-3
748	2EC	D.C. MIC-4
745	2E9	D.C. MIC-5 (encrypted)
3136	C4	Montgomery 7-Marine 1
3152	C5	Montgomery 7-Marine 2 (encrypted)

WMATA RADIO UPDATE

Plans are starting to come together for WMATA. Last year we learned that Motorola would install a dual-band P25 UHF/700 MHz trunked system and buses would use the UHF side. But it is unclear how long the buses would remain there. Installs of the new Motorola radios should start this summer. Switchover to WMATA's 700 MHz network is planned for 2020. Discussions are also underway about using FirstNet.



SCANNING GERMANNA COMMUNITY COLLEGE

by Kenneth Fowler, KD4IIW and David Schoenberger

College Profile:

Germanna is a two-year public college within the Virginia Community College System (VCCS). Germanna is one of the fastest growing community colleges within the Virginia system with an annual enrollment of approximately 11,000 students making it the seventh largest community college in Virginia in enrollment. Germanna provides quality, accessible and affordable educational opportunities for the residents of the City of Fredericksburg and the counties of Caroline, Culpeper, King George, Madison, Orange, Spotsylvania and Stafford. The college is centrally located between Richmond and Washington, D.C.

Germanna covers a large geographic area that includes both urban and rural communities. The college has locations off major roads such as Interstate 95 and Routes 1, 3, 17 and 29. Germanna's 2,439-square-mile service region is larger than the State of Delaware! The estimated population of the city and counties served by Germanna exceeds 400,000. (Source: Germanna Community College Emergency Plan)

Administration: Chief of Police

Locust Grove Campus - OR1 – Room 900
2130 Germanna Hwy Locust Grove VA 22508, (540) 423-9044

Police Department Operations: College Police Dispatch Ctr
Fredericksburg Area Campus - SP1 - Room 121,
10000 Germanna Point Dr. Fredericksburg

Patrol Operations Areas:

Area 1: Locust Grove and Culpeper Campuses
Area 2: Spotsylvania County, City of Fredericksburg, Stafford County, and Caroline County campuses

Frequencies:

453.3000 r Police and Security Dispatch
453.6375 r Police and Security Dispatch
453.2375 s Police and Security Dispatch
461.3875 r Police and Security Dispatch
452.8500 r Callboxes/Maintenance
453.7375 r

All of the above channels have a DCS of 712. All dispatches occur at the police dispatch center on the frequency of 453.3 and are simulcast through the repeaters at each campus. Police and security officers unit IDs are four-digit numbers (4000-6000). Building codes are listed in parentheses. These codes are referenced on the radio as campus/building location ID's.

Campus Locations:

Caroline County

Caroline Center – (??) – 11073 Col. Armistead Dr., #101
Ruther Glen, VA 22546



Culpeper County

Daniel Technology Center- (CU) —18121 Technology Drive
Culpeper, VA 22701

<u>Building Number</u>	<u>Name</u>
CU1	Daniel Technology Center

Callbox Locations

- Callbox 1 Southwest parking lot near the mailbox
- Callbox 2 Northeast parking lot
- Callbox 3 Near flag pole
- Callbox 4 North parking lot

Spotsylvania County

Fredericksburg Campus- (SP) – 10000 Germanna Point Dr.,
Fredericksburg, VA 22408

<u>Building Number</u>	<u>Name</u>
SP1	Dickenson Building
SP2	Workforce and Tech Center
SP3	Science and Engineering
SP4	Parking Garage

**Callbox Locations**

- Callbox 100 Middle of the east parking lot
- Callbox 200 Middle of the west parking lot
- Callbox 300 South end of east parking lot
- Callbox 400 North end of east parking lot
- Callbox 500 South end of the west parking lot
- Callbox 600 Westside of Dickinson near parking deck
- Callbox 700 ?
- Callbox 5408 Level 1 of parking deck-North 1-lower basement
- Callbox 5405 Level 2 of parking deck-South 2-main entrance
- Callbox 5402 Level 2 of parking deck-North 2-main entrance
- Callbox 5400 Level 3 of parking deck-South 3-SP3 entrance
- Callbox 5403 Level 3 of parking deck-North 3-entrance level
- Callbox 5404 Level 4 of parking deck South 4-top of deck
- Callbox 5406 Level 4 of parking deck North 4-top of deck

City of Fredericksburg

Fredericksburg Center for Advanced Technology – (CF) –
1325 Central Park Blvd, Fredericksburg, VA 22401

Orange County

Locust Grove Campus- (OR) – 2130 Germanna Hwy, Locust
Grove, VA 22508

<u>Building Number</u>	<u>Name</u>
OR1	French Slaughter Building
OR2	Maintenance Building
OR3	Workforce Motorcycle Bldg.

Callbox Locations

- Callbox 150 Middle of the main parking lot
- Callbox 250 Loading dock, Building #900
- Callbox 350 West end of main parking lot
- Callbox 450 Courtyard

Stafford County

Barbara J Fried Center – (ST) -124 Old Potomac Church Rd,
Stafford, VA 22554

Automotive Technology Center- (ST)- 42 Blackjack Road, Fred-
ericksburg, VA 22405

Note: No external Callboxes are at these locations.

U.S. PARK POLICE FINALLY PULL THE PLUG :-)

It was only a matter of when — not if — the U.S. Park police would abandon their unencrypted analog system — a mainstay of Washington, D.C. scanner listening for decades — to join MPD and other federal law enforcement agencies on a digitally encrypted radio system.



The cutover happened this past fall, rather hastily, as the analog system started to deteriorate. A somber "last call" for the analog system was recorded on the morning of December 17. "Attention all units," the dispatcher said on 166.925, "*the United States Park Police legacy analog radio system being patched to the new digital system at this moment is being placed out of service. This will be the final transmission for K-I-E-7-9-9 AND K-L-O-2-6-6.*"

The analog system has been dismantled. The main channels now are known as *dispatch* (171.775), *admin* (169.7875) and *special events* (169.7). As speculated, they are now entirely encrypted. The footprint is the same for all three channels and offer the widest coverage area of any conventional simulcast system in the region.

MANY THANKS TO THE WRITERS/CONTRIBUTORS IN THIS ISSUE. PLEASE KEEP CHM IN MIND FOR FUTURE ARTICLE, MEETING AND TOUR SUGGESTIONS.

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The Capitol Hill Monitor
c/o Alan Henney
6912 Prince George's Avenue
Takoma Park, MD 20912-5414

**CHM GET-TOGETHER SCHEDULED THIS Sunday,
Feb. 10, 2019, At Ledo's (see Page 1)!**

INSIDE: "Direct Connect" is back big time! O.C. goes P25 trunked, Mont. Co. and Orange Co. are next! Scanning Germanna College. Public safety updates from Fairfax, Stafford and Spotsylvania, etc.



The *Capitol Hill Monitor* is the non-profit newsletter of the Capitol Hill Monitors. The newsletter keeps scanner enthusiasts abreast of local meetings, frequency profiles and other topics of interest. We encourage readers to submit material and write articles that relate to the hobby. All submissions are subject to editing for style and content.

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